

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons which follow.

No claims are being amended. Claims 1-10 remain pending.

Rejection under 35 U.S.C. § 102

Claims 1-10 stand rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,361,121 to Hatorri et al. (hereafter "Hatorri"). Applicant respectfully traverses this rejection for at least the following reasons.

Independent claim 1 is directed to a wafer edge exposure apparatus for exposing an edge of a semiconductor wafer. The apparatus includes an optical section for irradiating exposure light toward the edge of the semiconductor wafer, and a sensor for detecting the height of the edge. On a basis of a value detected by the sensor, a focus position control mechanism controls the focal position of exposure light originating from the optical section. Thus, in the present invention as recited in claim 1, the sensor detects the height of the edge of the semiconductor wafer, and based on a value detected, the focal position of exposure light is controlled. The apparatus of claim 1 may solve problems associated with exposing the edge of resist films on a substrate, for example when the substrate has layers formed thereon (see present specification, page 4, lines 14-22). Thus, one advantage of the present invention of claim 1 is provided in applications where the layers formed on the substrate have some topography that affects the exposure. Applicant submits that Hatorri fails to disclose or suggest a system where a sensor detects the height of the edge of the semiconductor wafer, and based on a value detected, the focal position of exposure light is controlled.

Hatorri discloses a periphery exposing method and apparatus. The apparatus includes a turntable 1 that supports a wafer 2 (col. 2, lines 51-53). The apparatus also includes an irradiating unit 4 and a light receiving unit 8 opposite to the light receiving unit (col. 2, lines 61-64). A motor 11 moves a drive unit 10, upon which the irradiating unit 4 and the light receiving unit 8 are integrally fixed (col. 3, lines 12-17).

The Hattori apparatus, however, does not include a sensor that detects the height of the edge of the semiconductor wafer, in contrast to claim 1. Instead, the light receiving unit 8 of Hattori appears to detect the position of the edge of the wafer 2 in a lateral direction. An object of Hattori is to expose a peripheral portion of a wafer with a substantially uniform width (col. 1, lines 55-60). The position detector 13 of Hattori covers the moving stroke of the driving unit 10 (col. 3, lines 25-32), which moves in the radial direction of the wafer (col. 3, lines 12-18), and thus laterally. Thus, the position detector 13 detects the lateral position of the wafer 2, not the height of the edge. The apparatus disclosed by Hattori is completely different from the invention of claim 1, and Hattori fails to anticipate that claim.

Independent claim 5 is directed to a wafer edge exposure method including detecting the height of an edge of a semiconductor wafer, and controlling the focusing position of exposure light radiated toward the edge, on the basis of the height of the edge. Thus, for at least the same reasons as claim 1, claim 5 is also patentable over Hattori.

The dependent claims ultimately depend from either claim 1 or claim 5, and are patentable for at least the same reasons, as well as for patentable features recited therein.

For at least the reasons given above, applicant submits that the rejection under 35 U.S.C. 102 has been overcome, and respectfully request that the rejection be withdrawn.

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of

papers submitted herewith, applicant hereby petitions for such extension under 37 C.F.R.
§1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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